Learning to Fly: The Wright Brother's Adventure				
		2006 Scien		
		Grade Level Expe	ectations	
Delaware Science				
Grade 6				
Activity/Lesson	State	Standards		
			Frame and refine questions that can be	
			investigated scientifically, and generate	
The Society	DE	SCI.6.1.1.1	testable hypotheses.	
			Conduct investigations on a moving object	
			and make measurements of time and	
			distance traveled and determine the average	
The Society	DE	SCI.6.1.1.9	speed of moving objects.	
<u> </u>			Describe how the speed of an object	
			depends on the distance traveled and the	
			travel time. Explain how the motion of an	
			object can be described by its position,	
The Society	DE	SCI.6.1.1.11	speed, and direction of motion.	
			Conduct investigations on a moving object	
			and make measurements of time and	
			distance traveled and determine the average	
The Society	DE	SCI.6.3.2.4	speed of moving objects.	
1110 0001019		00110101211	Describe how the speed of an object	
			depends on the distance traveled and the	
			travel time. Explain how the motion of an	
			object can be described by its position,	
The Society	DE	SCI.6.3.2.6	speed, and direction of motion.	
The dociety		001.0.3.2.0	Use the size of the force and the distance	
			over which the force acts to compare how	
			much energy is transferred into a simple	
			machine to how much energy is transferred	
The Society	DE	SCI.6.3.2.15	out of a simple machine.	
The Society	DE	301.0.3.2.13	Conduct investigations on a moving object	
			and make measurements of time and	
Wright Brothers:			distance traveled and determine the average	
	DE	SCI.6.1.1.9	S .	
1900 Glider	DE	301.0.1.1.9	speed of moving objects.	
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Wright Brothers:	DE	0010004	distance traveled and determine the average	
1900 Glider	DE	SCI.6.3.2.4	speed of moving objects.	
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1901 Glider	DE	SCI.6.1.1.9	speed of moving objects.	
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Wright Brothers:			object can be described by its position,	
1901 Glider	DE	SCI.6.1.1.11	speed, and direction of motion.	

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Wright Brothers:			distance traveled and determine the average
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1901 Glider	DE	301.0.3.2.0	speed, and direction of motion.
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1902 Glider	DE	SCI.6.1.1.9	speed of moving objects.
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1902 Glider	DE	SCI.6.1.1.11	speed, and direction of motion.
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1902 Glider	DE	SCI.6.3.2.4	speed of moving objects.
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1902 Glider	DE	SCI.6.3.2.6	speed, and direction of motion.
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1903 Flyer	DE	SCI.6.3.2.6	speed, and direction of motion.
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1901: The First Improvement DE SCI.6.1.1.14 Combination of these forces influences the motion of the object. Conduct investigations and describe how a force can be directed to increase the speed of an object, decrease the speed of the object or change the direction in which the				
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force can be directed to increase the speed of an object, decrease the speed of the object or change the direction in which the				
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1901: The First object or change the direction in which the				·
	1901: The First			·
	Improvement	DE	SCI.6.1.1.15	•

			Conduct investigations on a moving object
			and make measurements of time and
1901: The First			distance traveled and determine the average
Improvement	DE	SCI.6.3.2.4	speed of moving objects.
			Describe how the speed of an object
			depends on the distance traveled and the
			travel time. Explain how the motion of an
1901: The First			object can be described by its position,
Improvement	DE	SCI.6.3.2.6	speed, and direction of motion.
mprovement		00110101210	Give examples of moving objects and
			identify the forces that act on these objects.
			Select examples where only one force acts
			on the object and examples where two or
			more forces act on the object. Explain that
			unbalanced forces acting on an object will
1901: The First			change its speed, direction of motion, or
Improvement	DE	SCI.6.3.2.9	both.
Improvement		001.0.0.2.0	Conduct investigations to describe how the
			relative directions of forces simultaneously
			acting on an object (reinforce or cancel each
			other) will determine how strongly the
1901: The First			combination of these forces influences the
Improvement	DE	SCI.6.3.2.10	motion of the object.
Improvement	DL	301.0.3.2.10	Conduct investigations and describe how a
			force can be directed to increase the speed
			of an object, decrease the speed of the
1901: The First			object or change the direction in which the
Improvement	DE	SCI.6.3.2.11	object moves.
improvement	DE	301.0.3.2.11	Explain that an object that feels the effects of
			balanced forces may be at rest or may be
1901: The First			moving in a straight line with a speed that
	DE	SCI.6.3.2.12	does not change.
Improvement		301.0.3.2.12	Accurately collect data through the selection
			and use of tools and techniques appropriate
			to the investigation. Construct tables,
			diagrams and graphs, showing relationships
			between two variables, to display and
			facilitate analysis of data. Compare and
Now Data	DE	CCI 6 4 4 0	question results with and from other students.
New Data	DE	SCI.6.1.1.3	
			Conduct investigations on a moving object
			and make measurements of time and
Now Data	DE	0010440	distance traveled and determine the average
New Data	DE	SCI.6.1.1.9	speed of moving objects.
			Describe how the speed of an object
			depends on the distance traveled and the
			travel time. Explain how the motion of an
Nam Date	DE	00104444	object can be described by its position,
New Data	DE	SCI.6.1.1.11	speed, and direction of motion.

			Conduct investigations on a maying chicat
			Conduct investigations on a moving object
			and make measurements of time and
l., ₅ .		201000	distance traveled and determine the average
New Data	DE	SCI.6.3.2.4	speed of moving objects.
			Describe how the speed of an object
			depends on the distance traveled and the
			travel time. Explain how the motion of an
			object can be described by its position,
New Data	DE	SCI.6.3.2.6	speed, and direction of motion.
			Conduct investigations on a moving object
			and make measurements of time and
1902: Success at			distance traveled and determine the average
Last	DE	SCI.6.1.1.9	speed of moving objects.
			Describe how the speed of an object
			depends on the distance traveled and the
			travel time. Explain how the motion of an
1902: Success at			object can be described by its position,
Last	DE	SCI.6.1.1.11	speed, and direction of motion.
			Conduct investigations on a moving object
			and make measurements of time and
1902: Success at			distance traveled and determine the average
Last	DE	SCI.6.3.2.4	speed of moving objects.
Last		001.0.0.2.4	Describe how the speed of an object
			depends on the distance traveled and the
			travel time. Explain how the motion of an
1902: Success at			object can be described by its position,
Last	DE	SCI.6.3.2.6	
Lasi	DE	301.0.3.2.0	speed, and direction of motion.
			Design a device that relies on the directional
			and/or mechanical advantage of a simple
			machine to perform a task (e.g., lift a weight,
			. , ,
			move a heavy object). Identify the forces and
1000: 0::			motions involved, the source of the energy
1902: Success at	DE	00100040	used to complete the task, and how the
Last	DE	SCI.6.3.2.16	energy is used by the simple machine.
			Conduct investigations on a moving object
l			and make measurements of time and
1903: Powered			distance traveled and determine the average
Flight	DE	SCI.6.1.1.9	speed of moving objects.
			Describe how the speed of an object
			depends on the distance traveled and the
			travel time. Explain how the motion of an
1903: Powered			object can be described by its position,
Flight	DE	SCI.6.1.1.11	speed, and direction of motion.
			Give examples of moving objects and
			identify the forces that act on these objects.
			Select examples where only one force acts
			on the object and examples where two or
			more forces act on the object. Explain that
1903: Powered			unbalanced forces acting on an object will
Flight	DE	SCI.6.1.1.13	change its speed, direction of motion or both.
ı ilgin	UL	001.0.1.1.13	priarige its speed, direction of motion of both.

			Conduct investigations and describe how a
			force can be directed to increase the speed
			of an object, decrease the speed of the
1903: Powered			object or change the direction in which the
	DE	SCI.6.1.1.15	,
Flight	DE	SCI.6.1.1.15	object moves.
			Conduct investigations on a moving object
1000 D			and make measurements of time and
1903: Powered	55	0010004	distance traveled and determine the average
Flight	DE	SCI.6.3.2.4	speed of moving objects.
			Describe how the speed of an object
			depends on the distance traveled and the
			travel time. Explain how the motion of an
1903: Powered			object can be described by its position,
Flight	DE	SCI.6.3.2.6	speed, and direction of motion.
			Give examples of moving objects and
			identify the forces that act on these objects.
			Select examples where only one force acts
			on the object and examples where two or
			more forces act on the object. Explain that
			unbalanced forces acting on an object will
1903: Powered			change its speed, direction of motion, or
Flight	DE	SCI.6.3.2.9	both.
			Conduct investigations and describe how a
			force can be directed to increase the speed
			of an object, decrease the speed of the
1903: Powered			object or change the direction in which the
Flight	DE	SCI.6.3.2.11	object moves.
9			Explain that an object that feels the effects of
			balanced forces may be at rest or may be
1903: Powered			moving in a straight line with a speed that
Flight	DE	SCI.6.3.2.12	does not change.
9			Use the size of the force and the distance
			over which the force acts to compare how
			much energy is transferred into a simple
1903: Powered			machine to how much energy is transferred
Flight	DE	SCI.6.3.2.15	out of a simple machine.
i ligiti		001.0.0.2.10	out of a simple machine.
			Communicate scientific procedures, data,
			and explanations to enable the replication of
			results. Use computer technology to assist in
1004: Improvement			communicating these results. Critical review
1904: Improvement	DE	SCI.6.1.1.5	is important in the analysis of these results.
in Dayton	<u>רב</u>	301.0.1.1.3	Conduct investigations on a moving object
			and make measurements of time and
1004: Improvement			distance traveled and determine the average
1904: Improvement	DE	SCI 6 1 1 0	_
in Dayton	טב	SCI.6.1.1.9	speed of moving objects.
			Describe how the speed of an object
			depends on the distance traveled and the
1,004			travel time. Explain how the motion of an
1904: Improvement	55		object can be described by its position,
in Dayton	DE	SCI.6.1.1.11	speed, and direction of motion.

		1	On the stimulation of the described and the
			Conduct investigations to describe how the
			relative directions of forces simultaneously
			acting on an object (reinforce or cancel each
			other) will determine how strongly the
1904: Improvement			combination of these forces influences the
in Dayton	DE	SCI.6.1.1.14	motion of the object.
			Conduct investigations and describe how a
			force can be directed to increase the speed
			of an object, decrease the speed of the
1904: Improvement			object or change the direction in which the
in Dayton	DE	SCI.6.1.1.15	object moves.
			Conduct investigations on a moving object
			and make measurements of time and
1904: Improvement			distance traveled and determine the average
in Dayton	DE	SCI.6.3.2.4	speed of moving objects.
			Describe how the speed of an object
			depends on the distance traveled and the
			travel time. Explain how the motion of an
1904: Improvement			object can be described by its position,
in Dayton	DE	SCI.6.3.2.6	speed, and direction of motion.
III Dayton		001.0.0.2.0	Give examples of moving objects and
			identify the forces that act on these objects.
			Select examples where only one force acts
			on the object and examples where two or
			more forces act on the object. Explain that
1004 Improvement			unbalanced forces acting on an object will
1904: Improvement	DE	SCI.6.3.2.9	change its speed, direction of motion, or
in Dayton	DE	501.6.3.2.9	both.
			Conduct investigations to describe how the
			relative directions of forces simultaneously
			acting on an object (reinforce or cancel each
			other) will determine how strongly the
1904: Improvement			combination of these forces influences the
in Dayton	DE	SCI.6.3.2.10	motion of the object.
			Conduct investigations and describe how a
			force can be directed to increase the speed
			of an object, decrease the speed of the
1904: Improvement			object or change the direction in which the
in Dayton	DE	SCI.6.3.2.11	object moves.
			Explain that the transfer of energy from one
1904: Improvement			object to another is caused by the exertion of
in Dayton	DE	SCI.6.3.2.14	a force.
	Learning to Fly		rother's Adventure
		2006 Scienc	
	Gra	de Level Exped	tations
Delaware Science			
Grade 7			
Activity/Lesson	State	Standards	
1	I	I	Frame and refine questions that can be
			· ·
The Society	DE	SCI.7.1.1.1	investigated scientifically, and generate testable hypotheses.

1901: The First			Design and conduct investigations with
Improvement	DE	SCI.7.1.1.2	controlled variables to test hypotheses.
			Accurately collect data through the selection
			and use of tools and techniques appropriate
			to the investigation. Construct tables,
			diagrams and graphs, showing relationships
			between two variables, to display and
			facilitate analysis of data. Compare and
			question results with and from other
New Data	DE	SCI.7.1.1.3	students.
	Learning to Fl		rother's Adventure
	Gr	2006 Science ade Level Expe	
Delaware Science	J	due Level Expe	Ctations
Grade 8			
Activity/Lesson	State	Standards	
,			Frame and refine questions that can be
			investigated scientifically, and generate
The Society	DE	SCI.8.1.1.1	testable hypotheses.
1901: The First			Design and conduct investigations with
Improvement	DE	SCI.8.1.1.2	controlled variables to test hypotheses.
			Accurately collect data through the selection
			and use of tools and techniques appropriate
			to the investigation. Construct tables,
			diagrams and graphs, showing relationships
			between two variables, to display and
			facilitate analysis of data. Compare and
			question results with and from other
New Data	DE	SCI.8.1.1.3	students.
			Communicate scientific procedures, data,
			and explanations to enable the replication of
			results. Use computer technology to assist in
1904: Improvement			communicating these results. Critical review
in Dayton	DE	SCI.8.1.1.5	is important in the analysis of these results.
1904: Improvement			Use mathematics, reading, writing, and
in Dayton	DE	SCI.8.1.1.6	technology in conducting scientific inquiries.
in Dayton		001.0.1.1.0	Explain that the transfer of energy from one
			object to another is caused by the exertion of
			a force. Create an energy chain to show how
			forces can change the mechanical energy of
			an object. Describe how the distance over
			which the forces act will influence the
			amount of energy transferred (and when
1904: Improvement			appropriate, the amount of energy
in Dayton	DE	SCI.8.1.1.19	transformed).
iii Daytoii	ייי	001.0.1.1.13	nansionneuj.

		Evoloin that the transfer of anargy from and
		Explain that the transfer of energy from one
		object to another is caused by the exertion of
		a force. Create an energy chain to show how
		forces can change the mechanical energy of
		an object. Describe how the distance over
		which the forces act will influence the
		amount of energy transferred (and when
		appropriate, the amount of energy
DE	SCI.8.3.2.2	transformed).
Learning to Fly		
Gra	ide Level Exped	ctations
01-1-	Ct l l -	
State	Standards	Identify and form avections that generate a
		Identify and form questions that generate a
		specific testable hypothesis that guide the
DE	0010444	design and breadth of the scientific
DE	SCI.9.1.1.1	investigation.
		Identify that 'work' is the process by which a
		force transfers energy to an object, and use
		measured quantities to make calculations of
		the work done by forces (W = energy
DE	SCI.9.1.1.38	transferred = F·D).
		Conduct investigations to determine what
		Conduct investigations to determine what
		factors influence whether a force transfers
		energy to an object or away from the object,
		and how the direction of the force (relative to
DE	00104400	the direction of motion) influences the
DE	SCI.9.1.1.39	quantity of energy transferred by the force.
		Describe the role that forces play when
		energy is transferred between interacting
		objects and explain how the amount of
		energy transferred can be calculated from
DE	SCI.9.3.2.11	measurable quantities.
		Give examples of common forces
		transferring energy to (or away from) objects.
		For example; a pulling force can transfer
		energy to an object (when the object is
		pulled along a floor), a pushing force can
		transfer energy away from an object (to slow
		its motion), and friction and air resistance
		always transfer kinetic energy away from
DE	SCI.9.3.2.12	moving objects.
		Identify that "work" is the process by which a
· ·		force transfers energy to an object, and use
İ		florce transfers energy to an object, and use
		measured quantities to make calculations of
	Learning to Fly Gra State DE DE	Learning to Fly: The Wright B 2006 Science Grade Level Expect State Standards DE SCI.9.1.1.1 DE SCI.9.1.1.38 DE SCI.9.3.2.11

			Describe the role that forces play when
			energy is transferred between interacting
			objects and explain how the amount of
1904: Improvement			energy transferred can be calculated from
in Dayton	DE	SCI.9.1.1.37	measurable quantities.
in Bayton		001.0.1.1.07	Identify that 'work' is the process by which a
			force transfers energy to an object, and use
			measured quantities to make calculations of
1904: Improvement			the work done by forces (W = energy
in Dayton	DE	SCI.9.1.1.38	transferred = F·D).
III Dayton	DE	301.9.1.1.30	
			Conduct investigations to determine what
			factors influence whether a force transfers
			energy to an object or away from the object,
			and how the direction of the force (relative to
1904: Improvement			the direction of motion) influences the
in Dayton	DE	SCI.9.1.1.39	quantity of energy transferred by the force.
			Describe the role that forces play when
			energy is transferred between interacting
			objects and explain how the amount of
1904: Improvement			energy transferred can be calculated from
in Dayton	DE	SCI.9.3.2.11	measurable quantities.
,			Give examples of common forces
			transferring energy to (or away from) objects.
			For example; a pulling force can transfer
			energy to an object (when the object is
			pulled along a floor), a pushing force can
			transfer energy away from an object (to slow
			its motion), and friction and air resistance
1904: Improvement			always transfer kinetic energy away from
in Dayton	DE	SCI.9.3.2.12	moving objects.
			Identify that "work" is the process by which a
			force transfers energy to an object, and use
			measured quantities to make calculations of
1904: Improvement			the work done by forces (W = energy
in Dayton	DE	SCI.9.3.2.13	transferred = F⋅D).
			Conduct investigations to data was in a sub-st
			Conduct investigations to determine what factors influence whether a force transfers
			energy to an object or away from the object,
1004. Image was to make the			and how the direction of the force (relative to
1904: Improvement	DE	SCI 0 2 0 4 4	the direction of motion) influences the
in Dayton	DE	SCI.9.3.2.14	quantity of energy transferred by the force.